What is claimed is:

Claims

1. A method at a first node for detecting nodes in a ring network, comprising:

5 receiving a packet;

for each discovery marker in the packet, saving topology information associated with the discovery marker;

adding a first discovery marker to the packet when the packet does not contain the first discovery marker, wherein the first discovery marker comprises

10 topology information associated with the first node; and

sending the packet to a next node in the network.

2. The method of claim 1, further comprising:

when the packet contains a discovery packet associated with a master node,

15 clearing old topology information prior to saving the topology information associated with the discovery marker.

3. The method of claim 1, further comprising:

when the packet does contain the first discovery marker, removing the first

20 discovery marker from the packet.

4. The method of claim 1, wherein the topology information further comprises: a connection state, a control master state, and node characteristics.

25 5. The method of claim 1, wherein the discovery marker further comprises:

a packet ring master field;

a control master field; and

the topology information.

6. The method of claim 1, wherein the nodes further comprise blades in a switch.

7. A node in a ring network, comprising:

5 a ring controller to:

receive a packet,

for each discovery marker in the packet, save topology information associated with the discovery marker,

add to the packet a first discovery marker when the packet does not

10 contain a first discovery marker, wherein the first discovery marker comprises topology information associated with the node, and

send the packet to a next node in the network.

8. The node of claim 7, wherein:

when the packet contains a discovery packet associated with a master node,

15 the ring controller is to clear old topology information prior to saving the topology information associated with the discovery marker.

9. The node of claim 7, wherein:

when the packet does contain the first discovery marker, the ring controller is

20 to remove the first discovery marker from the packet.

10. The node of claim 7, wherein the topology information further comprises:

a connection state, a control master state, and node characteristics.

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11. The node of claim 7, wherein the discovery marker further comprises:

a packet ring master field;

a control master field; and

the topology information.

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12. The node of claim 7, wherein the node further comprises a blade in a switch.

13. A switch, comprising:

10   a plurality of blades connected in a ring network, wherein each blade further comprises a ring controller, wherein the ring controller is to:

receive a packet at a first blade,

for each discovery marker in the packet, save topology information associated with the discovery marker,

15   add to the packet a first discovery marker when the packet does not contain a first discovery marker, wherein the first discovery marker comprises topology information associated with the first blade, and

send the packet to a next blade.

20 14. The switch of claim 13, wherein:

the ring controller is to clear old topology information prior to saving the topology information associated with the discovery marker when the packet contains a discovery marker associated with a master blade.

25 15. The switch of claim 13, wherein:

the ring controller is to remove the first discovery marker from the packet when the packet does contain the first discovery marker.

16. The switch of claim 13, wherein the topology information further comprises: a connection state, a control master state, and node characteristics.

17. The switch of claim 13, wherein the discovery marker further comprises:

5   a packet ring master field;

a control master field; and

the topology information.

18. A data structure stored on computer-readable media, comprising:

10   a packet-ring master field to indicate whether an originating blade is a current packet-ring master;

a control-blade master field to indicate whether the originating blade is a control-blade master;

a blade characteristics field to specify per-blade characteristics;

15   a connection state filed to indicate a blade's current connection state;

a blade identification field to specify the originating blade; and

a marker field to indicate that the data structure is a blade discovery marker.

19. The data structure of claim 18, wherein the current connection state

20   further indicates the current connection state for a primary neighbor and a protect-ring neighbor of the originating blade.

20. A method at a first node in a ring network for arbitration, comprising:

when a period of time has expired without receiving of an arbitration token,

25   transmitting the arbitration token on the ring network;

receiving the arbitration token;

when a node identifier associated with the arbitration token is at a lower priority than a node identifier associated with the first node, replacing the node

identifier associated with the arbitration token with the node identifier associated with the first node and transmitting the arbitration token on the ring network.

21. The method of claim 20, further comprising:

5   when the node identifier associated with the arbitration token is at a higher priority than the node identifier associated with the first node, transmitting the arbitration token on the ring network.

22. The method of claim 20, further comprising:

10   when the node identifier associated with the arbitration token is at an equal priority to the node identifier associated with the first node, converting the arbitration token to a normal packet and transmitting the normal packet on the ring network.

23. The method of claim 21, further comprising:

15   when the node identifier associated with the arbitration token is at the higher priority than the node identifier associated with the first node, incrementing a time-to-live field in the arbitration token.

24. The method of claim 23, wherein receiving the arbitration token further

20 comprises:

when the time-to-live field for the arbitration token is exceeded, converting the arbitration token to a normal packet and transmitting the normal packet on the ring network.

25   25. A node in a ring network, comprising:

a ring controller to:

transmit an arbitration token on the ring network when a period of time has expired without receipt of the arbitration token,

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receive the arbitration token, and

when a node identifier associated with the arbitration token is at a lower

priority than a node identifier associated with the first node, replace the node

identifier associated with the arbitration token with the node identifier associated

5   with the first node and transmit the arbitration token on the ring network.

26. The node of claim 25, wherein the ring controller further is to:

when the node identifier associated with the arbitration token is at a higher

priority than the node identifier associated with the first node, transmit the arbitration

10   token on the ring network.

27. The node of claim 25, wherein the ring controller further is to:

when the node identifier associated with the arbitration token is at an equal

priority to the node identifier associated with the first node, convert the arbitration

15   token to a normal packet and transmit the normal packet on the ring network.

28. The node of claim 26, wherein the ring controller further is to:

when the node identifier associated with the arbitration token is at the higher

priority than the node identifier associated with the first node, increment a time-to-

20   live field in the arbitration token.

29. The node of claim 28, wherein the ring controller further is to:

when the time-to-live field for the received arbitration token is exceeded,

convert the arbitration token to a normal packet and transmit the normal packet on

25   the ring network.

30. A computer-readable media comprising instructions, which when read

and executed by a computer comprise:

receiving a packet;

for each discovery marker in the packet, saving topology information associated with the discovery marker;

adding a first discovery marker to the packet when the packet does not

5 contain the first discovery marker, wherein the first discovery marker comprises topology information associated with a first node in a ring network; and

sending the packet to a next node in the network.

31. The computer-readable media of claim 30, wherein the instructions

10 further comprise:

when the packet contains a discovery packet associated with a master node, clearing old topology information prior to saving the topology information associated with the discovery marker.

15 32. The computer-readable media of claim 30, wherein the instructions further comprise:

when the packet does contain the first discovery marker, removing the first discovery marker from the packet.

20 33. The computer-readable media of claim 30, wherein the topology information further comprises: a connection state, a control master state, and node characteristics.

34. The computer-readable media of claim 30, wherein the discovery marker

25 further comprises:

a packet ring master field;

a control master field; and

the topology information.

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